

**REPLY BRIEF**

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**In RE United States Patent Application of**

**Eddie M. Schwalb**

**Serial Number**

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**Filed**

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**Titled**

**Method and System for Accessing and Implementing Declarative Applications Used within  
Digital Multi-Media Broadcast**

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**Examiner: Nathan E. Price**

**Art Unit: 2194**

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**INFORMATION INCORPORATED BY REFERENCE TO APPEAL BRIEF**

Information not specifically required by M.P.E.P. § 1208 to be included in the Reply Brief has been omitted for brevity. Reference may be made to the Appeal Brief for such omitted information, and the information in the Appeal Brief is correct.

### **STATUS OF CLAIMS**

Claims 1-7, 15, and 17-19 are canceled.

Claims 8-14, 16, and 20-29 are rejected.

The rejection of claims 8-14, 16, and 20-29 is being appealed.

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 8-10, 12, 13, and 23-29 are unpatentable under 35 U.S.C. § 103 over Wugofski in view of A90 and Dolan.

Whether claim 11 is unpatentable under 35 U.S.C. § 103 over Wugofski in view of A90 and Dolan and further in view of Burkett.

Whether claims 14, 16, and 20-22 are unpatentable under 35 U.S.C. § 103 over Wugofski in view of A90, Dolan, and Eyer et al.

## **ARGUMENT**

Appellant respectfully asks the Board of Patent Appeals and Interferences (“Board”) to reverse the Examiner’s rejection of all pending claims under 35 U.S.C. § 103(a). The rejections are improper as the Examiner failed to provide a *prima facie* case of obviousness because there is no motivation to combine references in the manner suggested by the Examiner, because the proposed combination fails to teach every element of the claimed invention, and because the cited references teach away from the combination proposed by the Examiner. Therefore, one of skill in the art would not have found it obvious to make Appellant’s invention at the time of the application when presented with the references cited by the Examiner.

In the Examiner’s Answer dated May 16, 2007 (“the Examiner’s Answer”) the Examiner maintained all rejections under 35 U.S.C. § 103(a). Accordingly, Appellant respectfully provides the following.

### **Rejections under 35 U.S.C. § 103(a)**

The Board should reverse the Examiner’s finding of obviousness as to claims 8-14, 16, and 20-29 relying at least on Wugofski, A90, and Dolan. In the Examiner’s Answer that maintains the rejections, the Examiner has mischaracterized Appellant’s arguments for patentability. Specifically, the Examiner summarizes one of Appellant’s arguments as being “that the references fail to teach using a declarative API. (Examiner’s Answer, page 10, fourth full paragraph.) The Examiner also argues against Appellant’s assertion that Dolan teaches that declarative-only systems are not suitable for providing electronic program guides (“EPGs”) (Examiner’s Answer, page 11, lines 1-2) and further argues that the cited references do not teach away from the claimed invention (Examiner’s Answer, page 12, last line). Appellant respectfully disagrees.

Appellant has made no contention that the cited references do not teach a declarative API, per se. Instead, Appellant has contended and continues to maintain that the Examiner has not shown that the cited references, alone or in combination, teach the recited portion of the claimed method/system, as illustrated by the method step from independent claim 23, namely:

using a declarative application program interface to access Program System Information Protocol (PSIP) data, wherein the declarative application program interface comprises an XDMML application program interface module that introduces tags having semantics that enable performance of an active dynamic discovery of at least one of (i) the content and (ii) the services.

(Claim 23 – similar limitations are found in independent claims 8 and 14.) Indeed, Appellant has set forth that the cited references teach against the claimed invention, as will be discussed in more detail below.

In the rejection, the Examiner acknowledges that Wugofski fails to disclose accessing PSIP data. (Examiner's Answer, page 6, line 3) Instead, the Examiner relies on A90 as disclosing that the PSIP standard is used to describe system information and program data. The Examiner also indicates that the purpose of the PSIP data is to provide program guide data. (Examiner's Answer, page 6 lines 5-7; see also A90 at 11.1 (attached herein at Evidence Appendix ("E.A.") 13).) What the Examiner fails to show from either Wugofski or A90 is the claimed method step of "using a declarative application program interface to access Program System Information Protocol (PSIP) data . . ." as set forth in full above. Merely showing that A90 discloses the existence of PSIP data does not show "using a declarative application program interface to access Program System Information Protocol (PSIP) data."

Quite simply, none of the cited references teach this claim limitation. The cited references instead clearly teach away from the combination proposed by the Examiner that would supposedly arrive at this limitation. Dolan is clearly the most recent reference of those

cited by the Examiner, and is the reference closest in time to Appellant's filing date. Dolan also reports on the then-current state of the art (see Dolan, page 30, footnote 7 (E.A. 15)), and therefore is highly probative of the view that one of skill in the art would have had as of the filing date of the instant application.

Dolan specifically teaches that the declarative application alone (the one using XDML) is unable to access electronic program guide (EPG) information, which, according to A90, is the purpose of the PSIP data (A90, page 45 (E.A. 13)). Specifically, see Dolan at page 36 (E.A. 17, "Section 9.3" and "Section 9.4"), where Dolan lists the suitability of a Declarative Only system and the suitability of a Procedural Only system. Notably, Dolan excludes electronic program guides (EPGs) from the list of suitable applications for Declarative Only systems, placing EPGs only in Procedural systems or systems having dual functionality. Similarly, Dolan's table 9.1 provides a summary of application suitability by platform, and the declarative DASE system "DDE-1-B DASE-DA" is not listed as being EPG-suitable (E.A. 19). As one of skill in the art will readily recognize, the reason that Dolan does not include EPGs as being suitable for declarative-only systems, is that previous declarative APIs cannot access PSIP data.

In the Examiner's Answer, the Examiner reveals what at first glance appears to be an inconsistency in Dolan, indicating that Dolan teaches that teletext may be used to provide a rudimentary program guide, and that a declarative system may use teletext. (Examiner's Answer at page 11 line 3-page 12, citing Dolan §§ 9.2, 9.3, and 6.3.) While it may be true that declarative APIs may make program guides using teletext, this does not indicate that declarative APIs may make the more traditional EPGs relying on PSIP data, as the Examiner has not shown that teletext is PSIP data (which it is not). More importantly, the Examiner therefore has not shown that declarative APIs perform the claimed limitation of accessing PSIP data. Instead, one



of skill in the art will readily understand that Dolan's clear indication that declarative-only APIs are unable to provide EPGs, as set forth above, is a clear teaching that declarative-only APIs are unable to perform the claimed function of accessing PSIP data.

Therefore, Dolan is highly probative of the state of the art as of the filing date of the application, and clearly shows that only procedural applications were understood as being able to access the PSIP data. Dolan also clearly teaches away from the claimed invention of "using a declarative application program interface to access Program System Information Protocol (PSIP) data." In light of these teachings of Dolan, it is clear that "a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the appellant." *In re Gurley*, 27 F.3d at 553, 31 USPQ2d at 1131. Therefore, Appellant respectfully submits that the cited references fail to teach the recited claim limitation of

using a declarative application program interface to access Program System Information Protocol (PSIP) data, wherein the declarative application program interface comprises an XDMML application program interface module that introduces tags having semantics that enable performance of an active dynamic discovery of at least one of (i) the content and (ii) the services.

Appellant also respectfully submits that there is no motivation contained in the references themselves to combine the references in such a way as to arrive at this limitation, and that one of skill in the art, when viewing these references would not expect success in doing so, but would instead be discouraged from doing so by the references themselves.

Appellant relies on and refers the Board to Appellant's additional arguments contained in Appellant's Appeal Brief. For the reasons set forth therein and the reasons set forth above, Appellant respectfully requests that the Board reverse all rejections under 35 U.S.C. § 103(a).

**Conclusion**

The Board should reverse each of the Examiner's rejections under 35 U.S.C. § 103(a) in light of the evidence and arguments. None of the rejections made by the Examiner provide a *prima facie* case of obviousness, because the combination of the cited references fails to disclose every element of the claims, because there is no motivation to combine the references in the manner disclosed by the Examiner, because the references themselves teach against the suggested combination, and because one of skill in the art would not expect success in combining the references in the manner disclosed by the Examiner. The conclusion that must be drawn from the rejections by the Examiner is that the Examiner has relied on improper hindsight reasoning to reconstruct Appellant's claims against the requirements of Section 103. The Board should therefore reverse the Examiner as to all rejections under 35 U.S.C. § 103(a).

Dated this 10 day of July, 2007.

Respectfully submitted,



Michael F. Krieger  
Attorney for Appellant  
Registration No. 35,232

KIRTON & McCONKIE  
1800 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111  
Telephone: (801) 321-4814  
Facsimile: (801) 321-4893

## **EVIDENCE APPENDIX**

The following evidence relied on by Appellant in the appeal was originally cited by the Examiner and was entered in the record by the Examiner as follows (as the cited references are voluminous, only relevant excerpts of the cited references have been included in this Appendix):

1) Advanced Television Systems Committee, “ATSC Data Broadcast Standard Including Amendment 1 and Corrigendum 1 and Corrigendum 2).” 26 July 2000, Doc. A/90 (“ATSC Data Broadcast Standard A/90”) was cited by the Examiner and entered in the record on December 13, 2005.

2) Dolan, Michael A. “Report on Television Data Applications.” 1 July 2001, NIST GCR 01-818 (“Dolan’s Report on Television Data Applications”) was cited by the Examiner and entered in the record on December 13, 2005.

**Excerpt from ATSC Data Broadcast Standard A/90**

## 11. DATA SERVICE ANNOUNCEMENT REQUIREMENTS

### 11.1 Introduction

Program and System Information Protocol (PSIP), specified in [2] is a collection of hierarchically arranged tables for describing system information and program guide data. This standard utilizes and builds upon the PSIP Standard to select data services in the broadcast stream. This standard defines extensions to [2].

The schedule of a Data Service may not be announced as a separate event; however there shall be a `data_service_descriptor` associated with each Data Service.

### 11.2 Virtual Channels

Each virtual channel in a PSIP Virtual Channel Table (VCT)<sup>7</sup> shall include no more than one data service. Consequently, there shall be no more than one data elementary stream of `stream_type` value 0x95 (Service Description Framework information) listed in each virtual channel's Service Location Descriptor in the VCT. Furthermore, there shall be no more than one data elementary stream of `stream_type` value 0x95 (Service Description Framework information) listed in a `TS_program_map_section` (instance of a Program Map Table) as defined in [11].

The Service Location Descriptor of a virtual channel conveying a data service shall list all the data elementary streams belonging to the ISO/IEC 13818-1 Program associated with the Virtual Channel that may be used by the data service. The data service may utilize any or all of the protocol encapsulation types defined by this standard. The `minor_channel_number` (as defined in [2]) for services of `service_type` value 0x04 shall be equal to or greater than 100. Even with this constraint, up to 900 stand-alone data services per value of major virtual channel number can be present in the ATSC Transport Stream.

### 11.3 Data Event Table

A new table, named the Data Event Table (DET) is defined hereinafter. The purpose of the DET is twofold:

- To support the announcement of a data service in a Virtual Channel (PSIP `service_type` field value equal to 0x04) which does not include any audio-visual event.
- To allow separate announcement of the data service portion of an audio/video/data event (PSIP `service_type` field value equal to 0x02) or audio/data event (PSIP `service_type` field value equal to 0x03) in a Virtual Channel.

For a virtual channel of `service_type` 0x04, every data service event shall be announced in a DET.

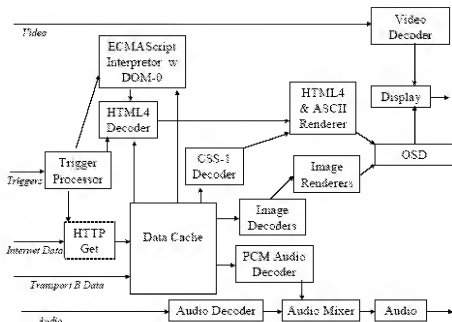
For a virtual channel of `service_type` 0x02 or 0x03, the data service portion of an audio/video/data event may be announced independently in a DET. The purpose of such separate

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<sup>7</sup> The VCT is a more general term that includes either the TCVT or the CVCT as defined in reference [2].

**Excerpts from Dolan's Report on Television Data Applications**

Report on Television Data Applications



### 8.3 SMPTE DDE-1 (Transport B) & ATSC DASE-1 (Declarative Only)<sup>6</sup>

The "Transport B" version of DDE-1 delivers the data over the video/audio broadcast along with the triggers. The Internet return-channel in this architecture is optional, since all the data essence could be delivered in the video/audio broadcast. The triggers are more likely to use the http:// URI scheme, but can use both http:// and https://.

ATSC is very close to completing the standardization<sup>7</sup> of its DTV Application Software Environment (DASE). It includes two main application environments: Declarative and Procedural. For this architecture we will constrain it to only a declarative application (DA) only. Due to the primary functional requirement of the DASE-DA, it is functionally very similar to SMPTE DDE-1, the only exception being no return-channel is defined.

ATSC-DA is comprised of the following Web technology:

- XHTML (XHTML1.0 Traditional and Frameset subsets)
- CSS2 Subset
- ECMAScript
- DOM2 Subset

<sup>6</sup> This is not meant to characterize a possible DASE receiver as "declarative only", but rather define it through an authoring constraint.

<sup>7</sup> This document is based on the ATSC work in process as of this writing. The reader is cautioned that the final DASE-1 Standard may differ from this and final publication from ATSC should be consulted.

## 9 Suitability of Each Receiver Configuration to the Application Requirements

### 9.1 *None (separate Internet browser)*

While the least defined, this is the most powerful of the environments. It relies on household computer capability which has grown to be quite rich. And, often a Windows® and Pentium® platform is assumed where the content authors actually include executables and plugins for this specific platform. This leads to a very open ended capability set, and thus, all applications **could** execute on this platform. However, it forces a physical dual-screen environment, and it is not possible to have reliably synchronized applications. The applications that seem workable in some reasonable manner are:

- Teletext
- Gambling
- Gaming
- Polling
- Train/Plain Schedules
- Weather

### 9.2 *SMPTE DDE-1 (Transport A)*

Transport A version of DDE-1 requires a return channel to work. Hence it has a few extra things it can do that Transport B cannot reliably do. It is declarative only, so applications that require general purpose computing cannot be done. Unlike "none", it uses a single screen so advertising and other applications requiring coupling to video can be accomplished. The applications that seem workable in some reasonable manner are:

- Teletext
- Coupons
- Gambling
- Gaming
- Home Shopping
- Inquiry
- Polling
- Plane/Train Schedules
- Weather

### 9.3 *SMPTE DDE-1 (Transport B) & ATSC DASE 1.0 (Declarative Only)*



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Transport B DDE-1 removes the requirement for a return channel. Thus it has a reduced application set with respect to Transport A. Since DASE DA is functionally very similar (the extra functions do not increase application support), then the list is identical. The applications that seem workable in some reasonable manner are:

- Teletext
- Coupons
- Look and Feel
- Train/Plane Schedules
- Weather

#### **9.4 DVB MHP 1.0 & ATSC DASE-1 (Procedural Only)**

ATSC DASE PA provides a robust general-purpose computing environment, but it lacks a return channel. Hence many applications that it could otherwise do are not possible. But, the applications that seem workable in some reasonable manner on ATSC DASE 1.0 PA are:

- Coupons
- EPG
- Look and Feel
- Train/Plane Schedules
- Weather

In contrast, the MHP 1.0 environment can do **all applications** except for "Mark for Recording". The PVR functions like this are relatively new, else it would probably have that as well. The primary reasons for this environment being able to handle the applications are:

- Return channel
- General Purpose Computing

#### **9.5 ATSC DASE-1 (Procedural and Declarative)**

This is just the union of the DA and PA capabilities, and thus the supported applications. The union list is:

- Teletext
- Coupons
- EPG
- Look and Feel
- Train/Plane Schedules
- Weather

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## 9.6 DVB MHP 1.1 (Procedural and Declarative)

This is MHP 1.0 (including the return channel) and a DA environment similar to DASE-1, hence it supports all the application scenarios.

## 9.7 OCAP (Procedural and Declarative)

This is DDE-1-B, plus MHP 1.0. Since DDE-1-B is functionally almost equivalent to DASE-1 PA and MHP 1.1 DA, it is therefore functionally equivalent to MHP 1.1, and thus supports all application scenarios.

## 9.8 Summary of Application Analysis

Table 9.1 below shows a summary of all the applications discussed in this report and which are likely to work or are best suited to each environment. As a general rule, **anything** can be done in a procedural environment with a return-channel. So, you will find the MHP columns and the OCAP column to be complete. However, the question of authoring cost affects this utility. For example, what may be a suitable authoring cost using HTML may be excessive using Java. Thus, the fact that one **could** do anything in Java TV is only one factor in considering what is best. This weighs in favor of the DA only environment (DDE).

The second driving factor (not addressed in this "authoring" report) is receiver cost. Clearly, it is more expensive to implement both the DA and PA environments than only one environment. So, without making any claims as to which environment may be more costly to implement in a receiver, clearly authoring both is more expensive than authoring one. So, this weighs in favor of the DA or PA only environments (DDE, DASE PA, MHP 1.0).

It is the author's opinion that in the near term, authoring complexity (i.e. production cost – see Section 7.4.5), and receiver cost will both be large factors in adoption of specific ITV environments.

The other thing of note is that the "Mark for Record" applications are not directly supported in any environment (although MHP comes close, there is currently no content identification to make it actually usable). This is one of a class of applications grouped into "personal video recorders" or PVR's, and are being addressed at this writing by the TV Anytime group [TVA]. While this is primarily a receiver functional set, it is an important emerging capability that will, in the near term, overshadow the advanced environments discussed here, in the author's opinion. The reader is encouraged to follow this work closely, particularly as it works through the content rights management issues.

Report on Television Data Applications

**Table 9.1 Summary of Application Suitability to Platforms.**

Application	None	DDE-1-A	DDE-1-B DASE-DA	DASE-PA	MHP 1.0	MHP 1.1	OCAP
Closed Captioning				X	X	X	X
Nielsen Ratings					X	X	X
Teletext	X	X	X	X	X	X	X
Coupons		X	X	X	X	X	X
EPG				X	X	X	X
EPG Interaction		X			X	X	X
Gambling	X	X			X	X	X
Gaming	X	X			X	X	X
Home Shopping		X			X	X	X
Inquiry		X			X	X	X
Look and Feel			X	X	X	X	X
Mark for Recording							
Polling	X	X			X	X	X
Sports Statistics	X	X	X	X	X	X	X
Train/Plane Schedules	X	X	X	X	X	X	X
Targeted Advertising	X			X	X	X	X
Viewer Demographics					X	X	X
Weather	X	X	X	X	X	X	X